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EXAMINER

NELSON, ALECIA DIANE

ART UNIT	PAPER NUMBER
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2675

DATE MAILED: 05/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/926,497

**Applicant(s)**

FAVOT ET AL.

**Examiner**

Alecia D. Nelson

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2004.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 5-14 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 5-14 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a) because they fail to show D type flip-flop 5014 as described in the specification (see page 9, line 9). Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "301" has been used to designate both Filter 2 and Filter 1. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to because in Figure 5 reference character "501" is described in the specification as being an OR function as opposed to an OU function as shown in the figure. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 9 recites the limitation "the chrominance path" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. ***Claims 5-6*** are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (hereinafter "Johnson"), US 5,339,092.

**As pertaining to claim 5**, Johnson discloses a system for displaying an image on a screen formed of a matrix of pixels each containing a given number of subpixels with primary colors, as figure 3 depicts comprising a graphics generator 20a (col. 3, lines 40-45; col. 5, lines 35-60) that is connected to an image memory 21a, that is organized to allow reading of n pixel or subpixels in parallel (col. 3, lines 46-50; col. 5, line 61-col. 6, line 14), which is also connected to a beamformer 23, the beamformer 23

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is configured to determine a luminous level of each pixel or subpixel of the screen by a using a filter or sliding window, comprising a given number of weighting coefficients applied to a set of given pixels or subpixels around the pixel or subpixels to be processed (col. 3, lines 18-37; col. 6, lines 15-27, 56-64; col. 7, lines 13-37). The beamformer 23 comprises a luminance path, which is performed in synchronous processing in parallel of the luminous levels of the n pixels or subpixels by selecting a filter or sliding window for each pixel or subpixel and by combining at a given instant the weighting coefficients of the filters or sliding windows selected for the n pixels or subpixels with the coefficients already contained in the beamformer 23 and originating from successive correlations of the coefficients of all the filters or sliding windows previously selected (col. 3, lines 18-37; col. 12, line 44-col. 13, line 16).

Johnson does not disclose a correlator but does disclose a beamformer, which can be construed as correlator because it functions in the same manner by using a filter to help display a pixel or subpixel.

**As pertaining to claim 6**, Johnson discloses that the selecting of a filter is undertaken in part by the generator (col. 5, line 36-col. 6, line 64). **Claim 6** is dependent on claim 5 and is rejected on the same basis and what is stated above.

8. **Claims 7, 9, and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson as applied to **claim 5** above, and further in view of Tanaka, US 5,824,935.

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**As pertaining to claim 7**, Johnson discloses what has previously been stated above. Johnson does not disclose the as a function of a color attribute that the synchronous and simultaneous processing of the color the pixels or subpixels can be accomplished by a stroke element or background element.

Tanaka discloses a karaoke apparatus that includes a background generator 15 and graphics generator 13, which further can be construed as stroke generator. The graphics generator or stroke generator 13 generates a song words image to be displayed on a monitor screen based on a character code generated based on MIDI data recorded on a words track. The MIDI data includes a character data associated with the display location of words, display duration data associated with the duration of time in which words are displayed, and color wipe control data for sequentially changing display colors of the words as the karaoke music progresses. The background video generator 15 selectively reproduces a predetermined background image or element corresponding to the genre of the karaoke music from a CD-ROM 14, and outputs the reproduced background image or element to an image mixer 16. The image mixer 16 superimposes the words or stroke image outputted from the graphic or stroke generator 13 onto the background image or element outputted from the background video generator 15, and outputs the resultant image to an image output circuit 17. The image output circuit 17 displays on the monitor screen a composite image of the background image or element and the words image or element mixed together by the image mixer 16 (col. 7, lines 9-27).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the graphics or stroke generator and background generator of Tanaka with the correlator of Johnson.

The suggestion/motivation for doing so would have been to provide a display that uses a graphics generator to produce a color code with attributes that can process colors of pixels or subpixels synchronously and simultaneously with the help of a beamformer of Johnson but when combined with Tanaka it further allows for the processing of the color of pixels or subpixels by using a background element and/or stroke element to enhance that pixel or subpixel to produce a higher resolution and have better contrast for a total image. **Claim 7** is dependent on **claim 5** and is rejected on the same basis and what is stated above.

**As pertaining to claim 9**, Johnson teaches that the luminance path and the chrominance path of the beamformer are formed by a union of independent subpixels serving to process successive subpixels of a display line of a matrix display (see column 13, lines 17-65), and a link between the lines for taking into account relations between the pixels or subpixels in a vertical direction is effected by inputting into a given line data emanating from an adjacent line (see column 13, line 47-column 14, line 12).

**As pertaining to claim 10**, by combining the graphic or stroke generator, the background generator and mixer of Tanaka with the beamformer of Johnson this allows for the pixels or subpixels to be processed. Furthermore it would be obvious that the

background generator would deliver primary color codes, red, green and blue intensity levels that would allow for the pixels or subpixels to be processed. It is also obvious that the output of luminance path of the stroke or graphics generator and the background generator would be used to construct or decided what pixels or subpixels would actually be intended to be displayed in the matrix. **Claim 10** is dependent on **claims 5 and 7** and is rejected on the same basis and what is stated above.

9. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson and Tanaka as applied to **claim 5 or 7** above, and further in view of Spaulding et al. (hereinafter "Spaulding"), US 6,091,849.

**As pertaining to claim 8**, Johnson and Tanaka disclose what has previously been stated above, however do not disclose the stroke path connected to the luminance path in such a way to manage intersections and superpositions of strokes of different colors as a function of predetermined color priority codes.

Spaulding discloses a method for half-toning a multichannel digital color or stroke image, in which the luminance component of the halftone pattern visibility is considered, the first step is to compute a spatial luminance distribution from the set of color halftone patterns. One method that can be used to determine the spatial luminance distribution is by measuring the luminance values that result when each of the individual colorants (e.g., cyan, magenta, and yellow) are used, as well as the luminance values that result for the possible combinations of the colorants (e.g., red=magenta+yellow, green=cyan+yellow, blue=cyan+magenta, and black=cyan+magenta+yellow). The



halftone patterns for each of the color or stroke channels are then superimposed and the luminance value corresponding to the resulting combination of colorants are assigned to each of the pixel locations to determine the resulting spatial luminance distribution (col. 4, lines 34-49).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the method of half-toning of Spaulding with that of Johnson and Tanaka.

The suggestion/motivation for doing so would have been to provide for display that allows for better or higher resolution and better contrast when displaying an image. **Claim 8** is dependent on **claims 5 and 7** and is rejected on the same basis and what is stated above.

10. **Claims 13-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson as applied to **claim 5** above, in view of Auger et al. (hereinafter "Auger"), US 6,130,678 and further in view of Perbet et al. (hereinafter "Perbet"), US 5,150,105.

**As pertaining to claim 13**, Johnson discloses what has previously been stated above. Johnson does not disclose processing of two pixels or subpixels, wherein the processing uses 16 microregions corresponding to a processing whose fineness is a quarter of a pixel.

Auger discloses that a display, which uses a smoothing circuit that uses micro-zones or micro-regions for accomplishing the smoothing of an image (col. 2, line 54-col. 3, line 1-3). Furthermore, Auger discloses that the smoothing circuit has multiple

tables of micro-zones (col. 6, lines 13-37). Since, Auger has multiple tables of micro-zones it would be obvious that the smoothing circuit would include 16 microregions or micro-zones.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the smoothing circuit that contain the tables of micro-zones with the beamformer of Johnson.

The suggestion/motivation for doing so would have been to provide a display that uses multiple micro-zones for either smoothing an image or for allowing an image to better resolution and higher contrast levels.

**Further pertaining to claim 13**, Perbet discloses another display, which uses a video processor that uses a micro-region for smoothing and softening contours (col. 1, lines 17-23). Furthermore, Perbet discloses that a format can be for example in a ratio of 3/. Perbet also discloses that any size format and ratio can be used depending on the image (col. 3, lines 5661). It would be obvious that if any ratio can be used that  $1/4$  of the pixel would fall into that range.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the video processor that includes the micro-region, of Perbet with the beamformer and smoothing circuit of Johnson and Auger.

The suggestion/motivation for doing so would have been to provide for a display that is able to produce images that use micro-regions or micro-zones for either smoothing and/or softening an image and/or for better resolution and higher contrast.

**Claim 13** is dependent on **claim 5** is rejected on the same basis and what is stated above.

**As pertaining to claim 14**, Perbet discloses the micro-region has to be a minimum of a 3x3 matrix; therefore it would be obvious that 4x4 matrix can be made from Perbet (col. 3, lines 3-20, 48-55). Furthermore, Perbet discloses that percentage of luminosity can be achieved by depending on how many colored pixels are included inside the micro-region. Therefore, it would be obvious that 8 possible luminous levels can be achieved. **Claim 14** is dependent on **claims 5 and 13** and is rejected on the same basis and what is stated above.

### ***Response to Arguments***

11. Applicant's arguments filed 03/03/04 have been fully considered but they are not persuasive.

The applicant argues with reference to **claim 5**, that the cited reference, Johnson, does not disclose or suggest synchronous processing in parallel performed in the beamformer, and therefore does not disclose or suggest a system for displaying an image on a screen as recited in the claim. However, it is taught that the beamformer receives data from the image memory and is interpreted to determine the appropriate intensity level for each pixel (see column 6, lines 5-14), wherein the beamformer uses sub-pixel positioning information from the image memory to more finely position the light energy on the display (see column 6, lines 56-60). The sub-pixel pattern includes

patterns of primary colors wherein the beamformer provides intensity levels for each primary color (see column 7, lines 3-31), and the patterns of primary colors are processed in parallel by the beamformer as shown in Figure 36 (see column 12, lines 44-column 13, line 16). Therefore Johnson does teach the parallel processing in the beamformer and therefore discloses a system for displaying an image on a screen as recited in the claim. Accordingly the rejection to claims 5-8 and 10-14 will be maintained.

### ***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alecia D. Nelson whose telephone number is (703) 305-0143. The examiner can normally be reached on Monday-Friday 9:30-6:00.

14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



adn/ADN  
May 5, 2004